

# INSTRUCTION SHEET

## Original Instructions

### SafetyOne

#### FS1B-C31S

#### Safety Controller

Confirm that the delivered product is what you have ordered. Read this instruction sheet to sure of correct operation. Make sure that the instruction sheet is kept by the end user.

### SAFETY NOTE

In this operation instruction sheet, safety precautions are categorized in order of importance Warning and Caution:

#### WARNING

Warning notices are used to emphasize that improper operation may cause severe personal injury or death.

#### CAUTION

Caution notices are used where inattention might cause personal injury or damage to equipment.

#### WARNING

- Do not disassemble, repair, or modify the FS1B, otherwise the safety performance of the FS1B are impaired.
- Turn off the power to the FS1B before installation, removal, wiring, maintenance, or inspection of the FS1B. Failure to turn power off may cause electrical shocks or fire hazard.
- Before operating the FS1B, read this instruction sheet and the user's manual carefully, and ensure that the environment conforms to the requirements of the FS1B specifications. If the FS1B is operated in an environment that exceeds the specifications, the safety characteristics of the FS1B are impaired.
- The installation, wiring, configuration and operation of the FS1B must be performed by "Safety responsible persons" only. Safety responsible persons are personnel who have necessary qualifications authorizing them to perform designing, installation, operation, maintenance, and disposal of the FS1B. Persons without technical expertise of safety products must not use the FS1B. Also, install the unit in a locked control panel so that no one other than Safety responsible persons can perform wiring or change settings.
- Due to the self-diagnostic function of the FS1B, reconnect the power of the FS1B at appropriate intervals to maintain the safety performance of the FS1B. (At least once every 24 hours)
- Install the FS1B according to this instruction sheet and the user's manual. Improper installation may cause failure of the FS1B.
- Do not use the monitor outputs or solenoid/lamp outputs as safety outputs. Failure of the FS1B or peripheral components may impair the safety performance of the system.
- To prevent unexpected startup of the system, take safety measures to prevent the hazardous source from operating only with the reset input of FS1B. (for example, provide a start switch, etc.)
- Ensure to install the reset switch outside the hazardous area, from where the operator of the reset switch can confirm that no one is inside the hazardous area, when starting the operation of safety system.
- Do not use the reset inputs and the external device monitor inputs as safety inputs. Failure of the FS1B or peripheral components may impair the safety performance of the system.
- Use the FS1B in compliance with laws and regulations of the country or region where the FS1B is used.
- Use safety inputs and safety outputs in circuit configurations which conform to safety requirements and applications.
- To prevent loss of safety function due to short circuit to other wires, wire properly so that the safety outputs do not touch the other wires accidentally or unintentionally. The wires shall be protected or separated according to the relevant standards (for example, ISO13849-2).
- Calculate the safety distances, while taking into consideration the response time of the FS1B and safety components connected to the FS1B.
- The FS1B is not capable of monitoring the speed of hazardous sources or preventing (detecting) the release of chips from workpieces. If necessary, take additional safety measure in the system to reduce risk.
- When using logic that includes mode select inputs, the operating mode set by the system should be displayed for the operator to verify the operating mode of the system. (for example, the monitor output of the product is taken into the system, information on the system operation mode is processed as a safety parameter, and the result of the setting is displayed on the display.)
- Safety performance is evaluated on a system-wide basis. Please check thoroughly before use.
- Use a power supply that meets the following required specifications completely:
  - Conforms to the power supply rating of the FS1B.
  - Complies with the SELV/ PELV circuit specified by IEC60364-4-41 etc..
  - Has the functionality or the functional equivalent of the control voltage and current of class 2 circuit, as defined in UL508.
  - Is in compliance with safety laws and regulations relating to electrical safety, EMC, and like under the laws and regulations of the country in which it is being used.
- In the case of setting a new configuration or modifying a configuration, check each input and output function.
- Separate the FS1B from equipment and wiring that does not meet the requirements for a class 2 circuit.

#### CAUTION

- The FS1B is designed for installation within a control panel. Do not install the FS1B outside a control panel.
- Install the FS1B in a control panel of IP54 or higher.
- Install the FS1B in environments described in this instruction sheet and the user's manual. If the FS1B is used in places where the FS1B is subjected to high temperature, high humidity, condensation, corrosive gases, excessive vibrations, or excessive shocks, failure such as electrical shocks, fire hazard, or malfunction may result.
- The FS1B is designed for use in pollution degree 2 environment. Use the FS1B in an environment of pollution degree 2.
- Prevent the FS1B from falling while moving or transporting otherwise damage or malfunction of the FS1B may result.

- Prevent metal fragments and pieces of wire from dropping inside the FS1B housing. Put a cover on the FS1B during installation and wiring. Ingress of such fragments and chips may cause fire hazard, damage, or malfunction.
- Install the FS1B so that there is adequate distance from the walls, heat generating components or peripherals, taking into consideration spacing requirements for maintenance and ventilation.
- Install the FS1B on 35mm DIN rails with BNL6 end clips(sold separately)on both sides of the FS1B.
- Use wires of a proper size to meet voltage and current requirements. Use solid wires or ferrules as described in instruction sheet and user's manual.
- Use common 0V DC, if different power supplies are used for the FS1B and other components.
- All the input/output signal cables should be installed away from machines power lines and high voltage cables.
- When disposing of the FS1B Series, do so according to the regulations of the country or region.
- Make sure that the end-user thoroughly understands the contents of this instruction sheet.

### 1 Unpacking

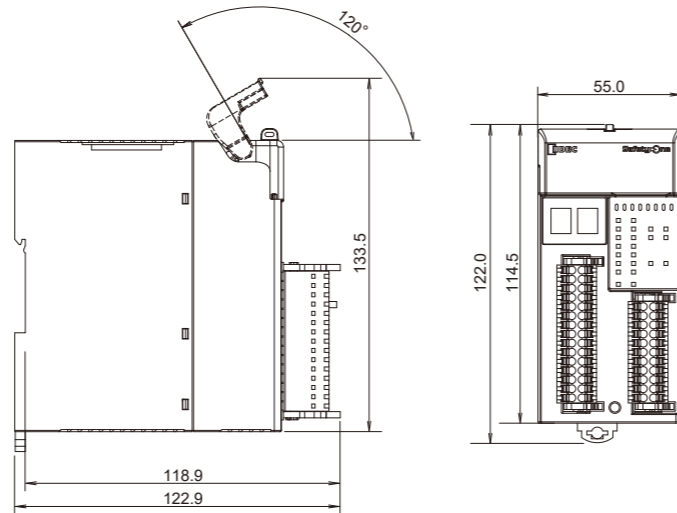
Before installing the FS1B-C31S, make sure that following items are contained completely Without damage during transportation.

Item	Type Number	Number
Module	FS1B-C31S	1
Connector (input / output)	FS9Z-CN03/FS9Z-CN04	1 for each
Marking tie	FS9Z-MT01	1
Instruction sheet (English/Japanese/German)	B-2242/B-2243/B-2322	1 for each

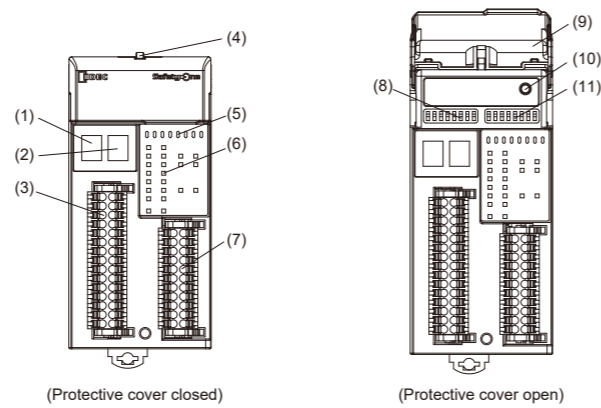
### 2 Dimensions and Parts Descriptions

#### Dimensions

All dimensions in mm.



#### Parts descriptions



- (1) Logic LED : The 7-segment green LED indicates the number of logic pattern selected.
- (2) Error LED : The 7-segment red LED indicates an error in the FS1B and peripherals.
- (3) Input connector : Push-in connector for input components.
- (4) Lock hole : Hole for locking the protective cover.
- (5) Timer LED : The timer LEDs indicate the selected off-delay timer value.
- (6) Input /output status LED : The input LEDs indicate the state of inputs. The output LEDs indicate the state of outputs.
- SAFE-IN : Status of safe inputs, X0 to X15
- RESET-IN : Status of reset inputs, X16, X17
- SAFE-OUT : Status of safe outputs, Y0 to Y3
- SOLENOID-OUT : Status of solenoid / lamp outputs, Y17, Y20
- (7) Output connector : Push-in connector for output components and power supply.
- (8) Logic switch : DIP switch for selecting the internal logic.
- (9) Protective cover : The cover protects unauthorized changing of configuration switches.
- (10) Enter button : The enter button is used to activate the configuration of logic and timer switches.
- (11) Timer switch : DIP switch for selecting the off-delay time value.

### 3 Product Specifications

#### Operating environment

Operating temperature (Surrounding air temperature)	-10 to +55°C (no freezing)
Storage temperature	-40 to +70°C (no freezing)
Operating humidity	5 to 95% (non-condensing)
Storage humidity	5 to 95% (non-condensing)
Pollution degree	2
Degree of protection	IP20 (Note1)
Corrosion immunity	Free from corrosive gas
Atmospheric pressure (Altitude)	Operation: 1013 to 795hPa (0 to 2000m) Transport: 1013 to 701hPa (0 to 3000m)
Over voltage category	II
Vibration resistance	5 to 8.4Hz amplitude 3.5mm, 8.4 to 150Hz acceleration 10m/s <sup>2</sup> (1G), 1 octave/min, 10 cycles each of XYZ axes
Shock resistance	150m/s <sup>2</sup> (15G), 11ms duration, 3 times per each of XYZ axes
Connector durability	25 operations maximum
Operation strength of configuration switches	100 operations maximum (per 1 switch)
Operation strength of enter button	1,000 operations maximum
Weight	Approx. 280g

Note1: Degree of protection (IP rating) is not applicable to UL certification.

#### Electrical conditions

Rated power voltage	24V DC
Allowable voltage range	20.4V DC to 28.8V DC (including ripple)
Power consumption	No load: 6W maximum. (24V DC) Maximum connected load: 48W maximum (24V DC)
Allowable momentary power interruption	1ms minimum (at rated voltage)
Dielectric strength	Between internal circuit and housing: 1000V AC, 1minute
Affect of improper power supply connection	Reverse polarity: No operation, no damage Improper voltage: Permanent damage may occur Improper wire connection: Permanent damage may occur
Response time	On->Off: 40ms maximum (Note2, Note6) 50ms maximum (logic 32b and 32C) (Note2, Note6) Off->On: 100ms maximum (Note3) Mode select: 3s maximum (Note4, Note6)
Startup time	3s maximum (Note5)

Note2: The time to shut off safety outputs after inputs are turned off or input monitor error is detected (when off-delay timer is set to 0s).

Note3: Time to turn on safety outputs after safety inputs are turned on (in case of auto reset).

Note4: Time to turn off safety outputs after a mode select request is generated (in case of timer switch is selected "0s").

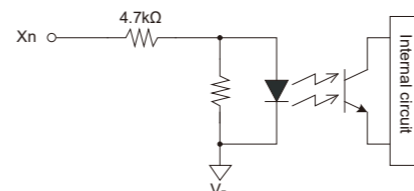
Note5: Time to change to Run state after power supply is turned on.

Note6: If the timer switch is selected except "0s", add the off-delay time to the reaction time. The maximum off-delay time is "selected value"x1.05+0.01s .

#### Safety input specifications

Drive terminal specifications (T0, T1, T2, T3, T4, T5, T6, T7, T10, T11, T12, T13, T14, T15)	
Rated drive voltage	Power supply voltage
Minimum drive voltage	Power supply voltage -3V DC
Number of drive terminals	14
Receive terminal specifications (X0, X1, X2, X3, X4, X5, X6, X7, X10, X11, X12, X13, X14, X15)	
Rated input voltage	24V DC
Input on voltage	15V DC to 28.8V DC
Input off voltage	Open or 0V DC to 5V DC
Number of receive terminals	14
Rated input current	6mA per port (at 24V DC to the input)
Input type	Sink input, Type1
Wiring specifications	
Cable length	30m maximum (total wiring length per input)
Allowable wiring resistance	300Ω maximum

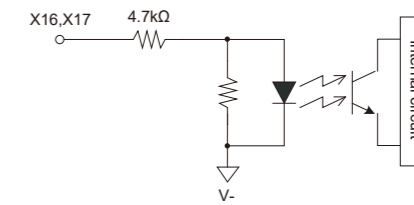
#### Safety input equivalent circuit



#### Reset input specifications

Rated input voltage	24V DC
Input on voltage	15V DC to 28.8V DC
Input off voltage	Open or 0V DC to 5V DC
Number of start input terminals	2 (X16, X17)
Input current	5mA per terminal (at 24V DC)
Input type	Sink input, Type1
Cable length	30m maximum (total wiring length per input)
Allowable wiring resistance	300Ω maximum

#### Reset input equivalent circuit

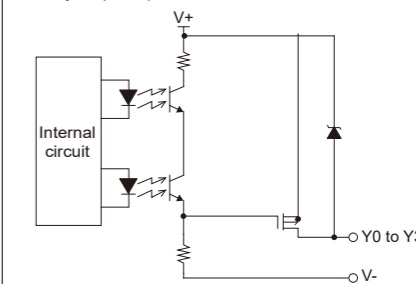


#### Safety output specifications

Rated output voltage	Power supply voltage
Minimum output on voltage	Power supply voltage -2V DC
Maximum detectable voltage at off (Note7)	14.6V DC
Maximum residual voltage at off	2V DC
Number of output terminals	4 (Y0, Y1, Y2, Y3)
Maximum load current	Point: 500mA maximum Total: 1A maximum
Leakage current	0.1mA maximum
Output type	Source output
Cable length	30m maximum (total wiring length per output)

Note7: When the safety output is off and an abnormal voltage occurs the safety output, if the voltage is same with the maximum detectable voltage or less, the FS1B may not be able to detect the failure. Ensure that the system does not cause the dangerous state even if the voltage is lower than the maximum detectable voltage (for example, use of appropriate actuators and protection of external wires).

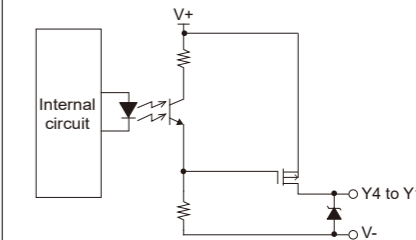
#### Safety output equivalent circuit



#### Monitor output specifications

Rated output voltage	Power supply voltage
Minimum output on voltage	Power supply voltage -2V DC
Number of output terminals	11 (Y4, Y5, Y6, Y7, Y10, Y11, Y12, Y13, Y14, Y15, Y16)
Maximum output current	Point: 20mA maximum
Leakage current	0.1mA maximum
Output type	Source output
Cable length	30m maximum (total wiring length per output)

#### Monitor output equivalent circuit



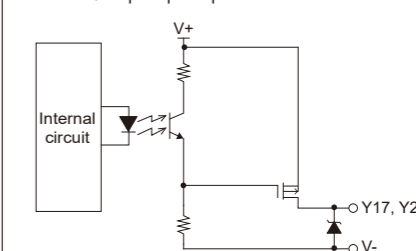
#### WARNING

Do not use monitor outputs for safety related purposes. This may cause a loss of safety functions in case of failure of the FS1B or peripherals.

#### Solenoid/lamp output specifications

Rated output voltage	Power supply voltage
Minimum output on voltage	Power supply voltage -2V DC
Number of output terminals	2 (Y17, Y20)
Maximum output current	Point : 250mA maximum
Leakage current	0.1mA maximum
Output type	Source output
Cable length	30m maximum (total wiring length per output)

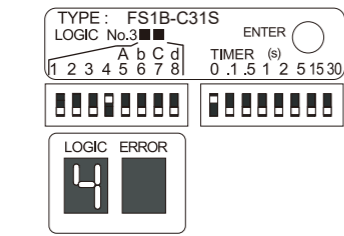
#### Solenoid/lamp output equivalent circuit



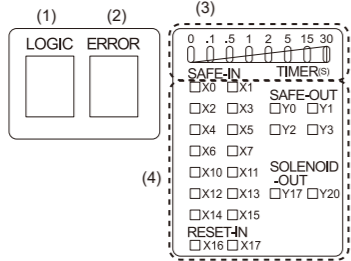
#### WARNING

Do not use solenoid/lamp outputs for safety related purposes. This may cause a loss of safety functions in case of failure of the FS1B or peripherals.

- Logic number  
The logic number of the FS1B is composed by a 3-digit code as following.  
Example: LOGIC No.304  
The first code "3" indicates the type number "FS1B-C31S".  
Following 2-digit code "04" indicates the state of the logic switch. The logic LED displays this 2-digit code. But "0" is not displayed.



- Indicators  
(1) Logic LED (green)  
(2) Error LED (red)  
(3) Timer LED (green)  
(4) Input/output status LED  
-SAFE-IN (red/green/orange)  
-RESET-IN (green)  
-SAFE-OUT (orange)  
-SOLENOID-OUT (orange)



(1) Logic LED

LED	Status	Description
"1"... "8"	On	Validated Logic number (Example, Logic 34A 4 → A → 4 → A → 4 → ...)
"A", "b", "C", "d" (Note1)	Blink	Selected (not validated) Logic Number (Example, Logic 34A 4 → A → Off → 4 → A → Off → 4 → A → ...)
"E"	Blink	The selected Logic has Configuration error. Logic is not selected or incorrect multiple Logics are selected.
None	Off	Error

Note1: In case of change in the input function, "." (dot) is added at the lower right of the number.  
Note2: Refer user's manual for detail of logic switch operation.

(2) Error LED

LED	Status	Description
"1" (Note3)	On	Input monitor error
"2" (Note3)	On	Fault in safety input wiring or connected component
"3" (Note3)	On	Fault in reset input wiring or connected component
"4" (Note3)	On	Fault in safety output wiring or connected component
"6" (Note3)	On	Fault in power supply
"7" (Note3)	On	Internal circuit error
"8" (Note3)	On	Abnormality when changing input function
"C"	Blink	Configuration procedure is in progress Configuration is valid (Note4)
None	Off	Normal operation

Note3: When the input function is changed, "." (dot) lights On/Blink in the lower right.  
Note4: Error LED will blink for 1 to 5 seconds after pressing the enter button. Releasing the button during blinking activates the setting. (The blinking LED becomes on if the button is pressed for more than 5 seconds, and the setting becomes invalid even after the button is released.)

(3) Timer LED

LED	Status	Description
"0"	On	No off-delay (safety outputs shut down immediately)
".1"	On	Off-delay timer 0.1s
".5"	On	Off-delay timer 0.5s
"1"	On	Off-delay timer 1s
"2"	On	Off-delay timer 2s
"5"	On	Off-delay timer 5s
"15"	On	Off-delay timer 15s
"30"	On	Off-delay timer 30s
Each LED	Blink	Selected off-delay timer value
None	Off	Off-delay timer value is not selected or FS1B is in the Stop state

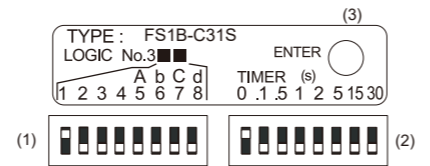
(4) Input LED SAFE-IN (X0...X15), RESET-IN (X16, X17)

LED	Status	Description
X0...X15	On	Input on
	Off	Input off, or FS1B is in the Stop state or Configuration state
	Blink	An input error occurred at the flashing point
X16, X17	On	Input on
	Off	Input off, or FS1B is in the Stop state or Configuration state
	Blink	An input error occurred at the flashing point

(5) Output LED SAFE-OUT (Y0...Y3), SOLENOID-OUT (Y17, Y20)

LED	Status	Description
Y0...Y3	On	Output on
	Off	Output off, or FS1B is in the Stop state or Configuration state
	Blink	Off-delay timer operation, or an output error occurred at the flashing point
Y17, Y20	On	Output on
	Off	Output off, or FS1B is in the Stop state or Configuration state

Configuration switches



- (1) Logic switch  
(2) Timer switch  
(3) Enter button

(1) Logic switch  
The slide switch for use in logic configuration. When one of 1 to 8 is turned on, or one of 1 to 4 and one of A, b, C, d (5 to 8) are turned on, the corresponding logic in FS1B is activated. For more details on each logic, refer to "Chapter 5 Logic" in user's manual. The upper position of each digit is the on state.

(2) Timer switch  
The slide switch for selecting off-delay time value. When 1 of 8 digits is turned on, the delay time at shut-off operation is activated. The upper position of each digit is the on state.

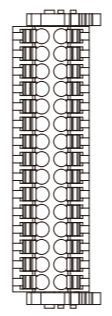
Timer value	Switch No.	Description
0	1	No off-delay (safety outputs shut down immediately)
.1	2	Off-delay timer 0.1s
.5	3	Off-delay timer 0.5s
1	4	Off-delay timer 1s
2	5	Off-delay timer 2s
5	6	Off-delay timer 5s
15	7	Off-delay timer 15s
30	8	Off-delay timer 30s

(3) Enter button  
The enter button is used to confirm the operation specification (logic, timer, input functions) settings. At the Configuration state, when all switches are set properly, pressing this button leads to activation of changed configurations. The configuration is not activated when the switches are not set properly even if the enter button is pressed. Error LED will blink for 1 to 5 seconds after pressing the enter button. Releasing the button during blinking activates the setting.

Note5: When operating enter button, use a precision screwdriver or tool 2mm wide maximum at the tip.

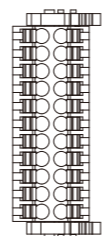
Connector specifications

**Input connector**  
Connector type: Push-in connector (30 pins)  
FS9Z-CN03 [IDEC]  
[Weidmüller type No.: B2CF 3.50/30/180LR SN BK BX]



Terminal	Description	Terminal	Description
T0	Safety input drive terminal 0	X0	Safety input receive terminal 0
T1	Safety input drive terminal 1	X1	Safety input receive terminal 1
T2	Safety input drive terminal 2	X2	Safety input receive terminal 2
T3	Safety input drive terminal 3	X3	Safety input receive terminal 3
T4	Safety input drive terminal 4	X4	Safety input receive terminal 4
T5	Safety input drive terminal 5	X5	Safety input receive terminal 5
T6	Safety input drive terminal 6	X6	Safety input receive terminal 6
T7	Safety input drive terminal 7	X7	Safety input receive terminal 7
T10	Safety input drive terminal 10	X10	Safety input receive terminal 10
T11	Safety input drive terminal 11	X11	Safety input receive terminal 11
T12	Safety input drive terminal 12	X12	Safety input receive terminal 12
T13	Safety input drive terminal 13	X13	Safety input receive terminal 13
T14	Safety input drive terminal 14	X14	Safety input receive terminal 14
T15	Safety input drive terminal 15	X15	Safety input receive terminal 15
X16	Reset input terminal 16	X17	Reset input terminal 17

**Output connector**  
Connector type: Push-in connector (22 pins)  
FS9Z-CN04 [IDEC]  
[Weidmüller type No.: B2CF 3.50/22/180LR SN BK BX]

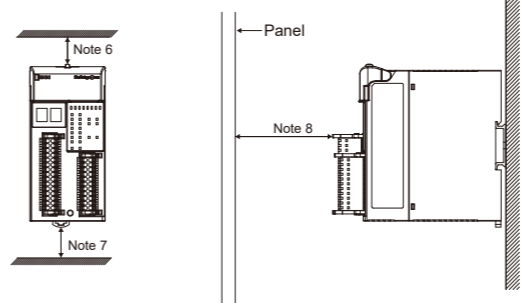


Terminal	Description	Terminal	Description
Y0	Safety output terminal 0	Y1	Safety output terminal 1
Y2	Safety output terminal 2	Y3	Safety output terminal 3
Y4	Monitor output terminal 4	Y5	Monitor output terminal 5
Y6	Monitor output terminal 6	Y7	Monitor output terminal 7
Y10	Monitor output terminal 10	Y11	Monitor output terminal 11
Y12	Monitor output terminal 12	Y13	Monitor output terminal 13
Y14	Monitor output terminal 14	Y15	Monitor output terminal 15
Y16	Monitor output terminal 16	Y17	Solenoid/lamp output terminal 17
Y20	Solenoid/lamp output terminal 20	NC	Blank terminal
V+	24V DC power terminal	V-	0V DC power terminal
NC	Blank terminal	NC	Blank terminal

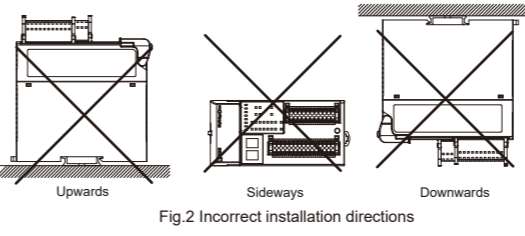
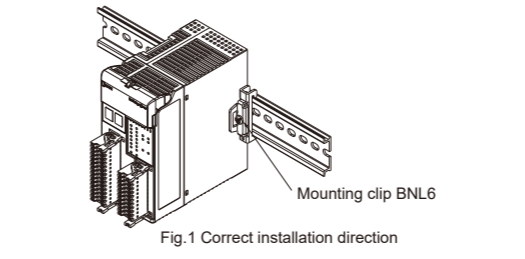
4 Installation and Wiring

- Installation location  
The FS1B is designed for installation within a control panel. Use the FS1B within the specification values. Do not install the FS1B following environments Otherwise, electric shock, fire, or malfunction may occur.  
- Where dust, briny air, iron particles exist or oil fumes.  
- Where the FS1B is subjected to shocks or vibrations.  
- Where corrosive or combustible gases exist.  
- Where condensation occurs.  
- Where the FS1B is directly exposed to water.  
- Where high-voltage lines, high-voltage equipment, power lines, and power equipment.  
- Where large switching surges are generated.  
- Where strong magnetic fields or strong electric fields are generated.  
Mount FS1B with enough space from any components as shown below for maintenance and ventilation. Do not install FS1B near, and especially above, any heating device or a heat source. Use FS1B in surrounding air temperature, -10 to 55°C.

Note6: For opening/closing of protective cover. (Minimum. 20mm)  
Note7: For installation/removal of the FS1B on the DIN rail, and ventilation. (Approx. 20mm)  
Note8: For wiring of input and output connectors. (Approx. 80mm)

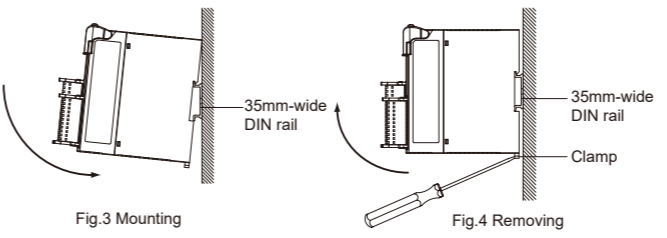


- Installation direction  
Mount FS1B on a vertical plane as shown in Fig.1. All other installation directions are not allowed.



- Installation to DIN rail  
Mount and remove FS1B on a 35mm-wide DIN rail according to the following instructions. Applicable DIN rail: (for example) BAA1000 (IDEC)

- Mounting on DIN rail  
1. Fasten DIN rail to panel using screws.  
2. With the top of FS1B unit facing up, as shown in Fig.3, insert the groove, on the rear of the unit, and press the unit in direction of the arrow.  
3. Use BNL6 mounting clips (sold separately) on both sides of FS1B to prevent it from moving sideways.



- Removing from DIN rail  
1. Insert a flat screwdriver into the slot in the clamp.  
2. Pull the DIN rail hook until you hear a click, as shown in Fig.4.  
3. Remove FS1B bottom out.

- Wiring method  
**Mounting and removing the connector on FS1B**  
To mount the connector to FS1B, insert it all the way. When it is inserted to the end, clicking sound and sensation occurs and the connector is locked by the lock and release lever.

**Applicable wires and ferrules**  
Use the following to wire to FS1B  
- Solid wire: 26 AWG to 16 AWG (0.14 to 1.5 mm²)  
Stripping length: 10 mm ± 0.5mm  
- Stranded wire / Flexible wire: 26 AWG to 17 AWG (0.14 to 1.0 mm²)  
Use cables conforming to the applicable standards. When using stranded wire, insulated ferrule should be used.

Applicable wire (stranded wire)	Wire strip length	Type number (Order number)	Manufacturer
26 AWG	0.14	S3TL-F014-12WC	IDEC
24	0.25	H0,14/12 GR SV (9028240000)	Weidmüller
22	0.34	S3TL-H025-12WJ	IDEC
20	0.5	H0,25/12 HBL (9025760000)	Weidmüller
18	0.75	S3TL-H034-12WT	IDEC
17	1.0	H0,34/12 TK (9025770000)	Weidmüller
		S3TL-H05-16WA	IDEC
		H0,5/16 OR (9025870000)	Weidmüller
17	1.0	S3TL-H075-16WW	IDEC
		H0,75/16 W (9025860000)	Weidmüller
17	1.0	S3TL-H10-16WY	IDEC
		H1,0/16 GE (9025950000)	Weidmüller

- Wiring  
Turn off the power supply before wiring.  
**Connecting wires**  
Insert the stripping solid wire or the stranded wire with insulating ferrule attached straight in. No tools are required to connect wires. After wiring, tug lightly to make sure that the wire is properly connected.  
**Removing wires**  
When disconnecting the wire, use a flat screwdriver or similar tool and press the pusher (removal button) with proximately 20N of force. Remove the wire straight out by pressing the pusher. Be careful not to damage the push-in terminal. Operate the pusher with a force of 40N. Do not press excessively. Do not pull out the cable without pressing the pusher.

5 Safety Performance

- Safety performance based on IEC61508 requirements

Safety outputs	PFDavg (Note9)	PFH (Note9)	Maximum achievable SIL
Dual channel safety output	≤9.8 × 10 <sup>-6</sup>	≤1.3 × 10 <sup>-10</sup>	3
Single channel safety output	≤4.0 × 10 <sup>-5</sup>	≤6.7 × 10 <sup>-10</sup>	2

Note9: Proof test interval is 10 years. After this time the FS1B must be replaced.

- Safety performance based on ISO13849-1 requirements

Safety outputs	MTTF <sub>D</sub>	DCavg	Achievable category	Maximum achievable PL
Dual channel safety output	≥206 years	High	3 and 4	e
Single channel safety output	≥176 years (Note11)	Medium	3	d

Note10: Mission time is 10 years.  
Note11: The maximum value per channel is 100 years per ISO 13849-1 requirement.

6 Configuration and Operation

Refer the latest user's manual (B-2244) for configuration, operation, and wiring, and use properly.

7 Declaration of Conformity

**EU declaration of conformity**  
Identification of the Product: Safety Controller  
Name and address of Manufacturer: IDEC CORPORATION  
2-6-64 Nishimiyahara, Yodogawa-ku, Osaka 532-0004 Japan  
Name and address of the authorized representative and authorized to compile the technical file: APEM SAS  
55, Avenue Edouard Herriot BP1, 82303 Caussade Cedex, France  
This declaration of conformity is issued under the sole responsibility of the manufacturer.  
Object of the declaration: Series Name: FS1B Series  
Model No.: FS1B-C31S  
The object of the declaration described above is in conformity with the relevant EU harmonization legislation: 2006/42/EC Machinery Directive  
2014/30/EU Electromagnetic Compatibility Directive  
2011/65/EU and (EU)2015/863 Restriction of the use of certain hazardous substances (RoHS) Directive  
Applied Union harmonized legislation and references to the relevant harmonization standards used or references the other technical specifications in relation to which conformity is declared.  
EN ISO 13849-1: 2015  
EN ISO 13849-2: 2012  
EN 61131-2: 2007  
EN IEC 63000: 2018  
The notified body: TÜV Rheinland Industrie Service GmbH (NB No.0035)  
Am Grauen Stein 51105 Köln Germany  
Certificate No. 01/205/5958.00/24  
Additional Information: Reference Standards  
IEC 61508: 2010 Part 1 to 3  
EN 61000-6-7: 2015